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Claim 1. A permanently-connected building-entrance shunting surge protector for a single phase power line, said protector comprising:

a metal-oxide varistor having two electrodes and being coupled at one electrode to a power line at a location adjacent to a building entrance; and

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a gas-discharge tube having a line electrode connected to the other electrode of the metal-oxide varistor and having a ground electrode connected to a building ground at the location adjacent to the building entrance whereby surges are shunted to the building ground through said metal-oxide varistor and said gas-discharge tube.

Claim 2. A surge protector as recited in claim 1 wherein the metal-oxide varistor is coupled to the power line through a series-connected fuse.

Claim 3. A surge protector as recited in claim 1 further comprising a second metal-oxide varistor having two electrodes and being coupled at one electrode to the power line at the location adjacent to the building entrance, and wherein

the gas-discharge tube has a second line electrode connected to the other electrode of the second metal-oxide varistor.

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Claim 4. A surge protector as recited in claim 1 wherein the second metal-oxide varistor is coupled to the power line through a series-connected fuse.

Claim 5. A permanently-connected building-entrance shunting surge protector for multi-phase power lines, said protector comprising:

a first metal-oxide varistor having two electrodes and being coupled at one electrode to a first power line at a location adjacent to a building entrance;

a first gas-discharge tube having a line electrode connected to the other electrode of the first metal-oxide varistor and having a ground electrode connected to a building ground at the location adjacent to the building entrance whereby surges on the first power line are shunted to the building ground through said first metal-oxide varistor and said first gas-discharge tube;

a second metal-oxide varistor having two electrodes and being coupled at one electrode to a second power line at the location adjacent to the building entrance, and

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a second gas-discharge tube having a line electrode connected to the other electrode of the second metal-oxide varistor and having a ground electrode connected to the building ground at the location adjacent to the building entrance whereby surges on the second power line are shunted to the building ground through said second metal-oxide varistor and said second gas-discharge tube.

Claim 6. A surge protector as recited in claim 5 further comprising a coupling capacitor connected between the two power lines at the location adjacent to the building entrance.

Claim 7. A surge protector as recited in claim 5 wherein each of the metal-oxide varistors is coupled to a power line through a series-connected fuse.

Claim 8. A permanently-connected building-entrance shunting surge protector for multi-phase power lines, said protector comprising:

a first protector sub-circuit connected between a first power line and a building ground at a location adjacent to a building entrance; and

a second protector sub-circuit connected between a second power line and the building ground at the location adjacent to a building entrance;

wherein each protector sub-circuit includes two metal-oxide varistors each having two electrodes and each being coupled at one electrode to a power line, and a gas-discharge tube having two line electrodes each connected to the other electrodes of the metal-oxide varistors and having a ground electrode connected to the building ground at the location adjacent to the building entrance whereby surges are shunted to building ground through the appropriate protector sub-circuit respectively.

Claim 9. A surge protector as recited in claim 8 wherein each of the metal-oxide varistors is coupled to a power line through a series-connected fuse.

Claim 10. A surge protector as recited in claim 8 further comprising a third protector sub-circuit connected between the first power line and the building ground, and a fourth protector sub-circuit connected between the second power line and the building ground.

Claim 11. A surge protector as recited in claim 8 further comprising a coupling capacitor connected between the two power lines at the location adjacent to the building entrance.

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Claim 12. A surge protector as recited in claim 8 providing AC power surge protection of greater than 10 kilovolts open circuit and 40,000 amperes short circuit.

Claim 13. A surge protector as recited in claim 8 wherein the protector is located within 2 meters of the building ground.

Claim 14. A surge protector as recited in claim 8 wherein the inductance between the protector and the building ground is less than 2.5 microhenries.

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Claim 15. A permanently-connected building entrance shunting surge protector for a power line to a building having a building ground at a location adjacent to a building entrance,

said protector comprising a protector sub-circuit, said protector sub-circuit comprised of a metal-oxide varistor and a gas-discharge tube, said metal-oxide varistor and said

gas-discharge tube being connected in series between the power line and the building ground at a location adjacent to the building entrance whereby surges on the power line are shunted to the building ground through said series-connected metal-oxide varistor and gas-discharge tube.

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Claim 16. The surge protector as recited in claim 15 characterized in that the gas-discharge tube has two line electrodes and there are two metal-oxide varistors in the protector sub-circuit, with each of the two metal-oxide varistors connected to one electrode of the two line electrodes of the gas-discharge tube respectively, so as to provide paralleling of the metal-oxide varistors between the power line and the building ground through the gas-discharge tube.

Claim 17. The surge protector as recited in claim 15 characterized in that the power line is a multi-phase power line and that there are multiple protector sub-circuits connected in series between the various phases of the power line and the building ground respectively.

Claim 18. The surge protector as recited in claim 15 characterized in that said metal-oxide varistor in series with the gas-discharge tube is connected to the power line.

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